Appl. No. :09/741,631
Reply to Office Action of September 19, 2006

Atty Docket No.: 990347

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended): A method <u>for improving the acquisition time of positioning signals</u> <u>received by a mobile station,</u> comprising:

    <u>receiving a plurality of positioning signals in a reference receiver remote from the mobile</u> <u>station, including</u> determining a code phase of ~~each among a~~ <u>the</u> plurality of ~~received~~ <u>positioning</u> signals<u>;</u> ~~, wherein said received signals are GPS signals; and~~

    ~~transmitting~~ <u>determining</u> a time difference between the code phases of at least ~~one pair~~ <u>a</u> <u>first and a second positioning signal</u> among the plurality of received <u>positioning</u> signals [[.]]<u>,</u>

    <u>transmitting said time difference to the mobile station;</u>

    <u>receiving the first and second positioning signals at the mobile station, including reducing</u> <u>the search space for the code phase of the second positioning signal based at least in part on said</u> <u>time difference.</u>

2. (canceled)

3. (currently amended): The method according to claim 1, wherein each among the plurality of received signals has a corresponding periodic code[[,]] <u>; and</u>

    wherein each among the code phases relates to a predetermined position within the corresponding periodic code.

4. (original): The method according to claim 1, wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence spread spectrum modulated signal.

5. (original): The method according to claim 1, wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence pseudonoise modulated signal.

6. (original): The method according to claim 1, the method further comprising receiving a composite signal,

wherein each among the plurality of received signals is based at least in part on at least a portion of the composite signal.

7. (currently amended): The method according to claim 6,

wherein the determining a code phase of each among a plurality of received signals comprises calculating a correlation, for each among the plurality of received signals, between a corresponding code sequence and a signal based at least in part on the composite signal,

wherein each among the plurality of received signals has a corresponding periodic code, and

wherein each among the code phases relates to a corresponding predetermined position within the corresponding periodic code[[,]] ; and

wherein the code sequence relates at least in part to the corresponding periodic code.

8. (canceled):

9. (canceled)

10. (currently amended): The method according to claim 1̲8̶, wherein the first r̶e̶c̶e̶i̶v̶e̶d̶ positioning signal has a corresponding periodic code and the second r̶e̶c̶e̶i̶v̶e̶d̶ positioning signal has a corresponding periodic code[[,]] ; and

wherein each among the code phase of the first r̶e̶c̶e̶i̶v̶e̶d̶ positioning signal and the code phase of the second r̶e̶c̶e̶i̶v̶e̶d̶ positioning signal relates to a corresponding predetermined position within the corresponding periodic code.

Claims 11 - 14. (canceled):

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15. (currently amended): An apparatus comprising:

a ~~GPS~~ reference receiver configured to receive a plurality of positioning signals;

a correlator configured to determine a code phase for each among the plurality of ~~received~~ positioning signals; and

a transmitter configured to transmit a time difference between the code phases of at least ~~one pair~~ a first and a second positioning signal among the plurality of ~~received~~ positioning signals.

16. (canceled)

17. (currently amended): The apparatus according to claim 15, wherein each among the plurality of ~~received~~ positioning signals has a corresponding periodic code[[,]] ; and

wherein each among the code phases relates to a predetermined position within the corresponding periodic code.

18. (currently amended):   The apparatus according to claim 15, wherein each among the plurality of ~~received~~ positioning signals is based at least in part on a corresponding direct-sequence spread spectrum modulated signal.

19. (currently amended):   The apparatus according to claim 15, wherein each among the plurality of ~~received~~positioning signals is based at least in part on a corresponding direct-sequence pseudonoise modulated signal.

20. (currently amended):   The apparatus according to claim 15,

wherein the correlator is further configured to determine a code phase for each among the plurality of ~~received~~positioning signals at least in part by calculating a correlation, for each among the plurality of ~~received~~positioning signals, between a corresponding code sequence and the plurality of ~~received~~positioning signals,

wherein each among the plurality of ~~received~~positioning signals has a corresponding periodic code;

wherein each among the code phases relates to a corresponding predetermined position within the corresponding periodic code[[,]] ; and

wherein the corresponding code sequence relates at least in part to the corresponding periodic code.

21. (currently amended): An apparatus comprising:

a ~~GPS~~ reference receiver configured to receive a first and second signal and to receive a signal comprising a time difference between the code phase of the first ~~received~~positioning signal and the code phase of the second ~~received~~positioning signal[[,]] ; and

a correlator configured to determine a code phase of at least one of the first and second ~~received~~positioning signals with respect to a predetermined code and to correlate the other of the first and second ~~received~~positioning signals to the predetermined code based upon the time ~~relationship~~ difference between the first and second ~~received~~positioning signals.

22. (canceled)

23. (currently amended):   The apparatus according to claim 21, wherein the correlator is further configured to determine a code phase for the second ~~received~~positioning signal at least in part from the ~~information~~ time difference.

24. (currently amended): A system comprising:

a reference receiver configured to receive ~~GPS~~ positioning signals from a plurality of space vehicles and to transmit information; and

a field receiver configured to receive the positioning signals from a plurality of space vehicles and to receive the information transmitted from the reference receiver,

wherein the reference receiver determines a reference code phase for each among at least a first one and a second one of the positioning signals, ~~and~~

wherein the information pertains at least to a time difference between the reference code phases for the first one and the second one of the positioning signals, ~~and~~

wherein the field receiver determines a field code phase for the first one of the
positioning signals, and

wherein the field receiver determines a field code phase for the second one of the
positioning signals at least in part from the information.

25. (canceled)

26. (New) The system according to claim 24, wherein the positioning signals transmitted from
the space vehicles comprise one of GPS and GLONASS signals.

27. (New) The system according to claim 24 wherein the field receiver and the reference
receiver are unsynchronized in time.

28. (New) The method according to claim 1 wherein the plurality of positioning signals are
transmitted from a corresponding plurality of space vehicles.

29. (New) The method according to claim 1 wherein the mobile station and the reference
receiver are unsynchronized in time.

28. (New) The apparatus according to claim 15 wherein the plurality of positioning signals are
transmitted from a corresponding plurality of space vehicles.

31. (New) The apparatus according to claim 15 wherein the mobile station and the reference
receiver are unsynchronized in time.

32. (New) The apparatus according to claim 21 wherein the plurality of positioning signals are
transmitted from a corresponding plurality of space vehicles.

33. (New) The apparatus according to claim 21 wherein the mobile station and the reference
receiver are unsynchronized in time.